

● PRINTER RUSH ●

(PTO ASSISTANCE)

Application : 09/721,479 Examiner : S. CHEN GAU : 1648

From: R. MITCHELL Location: IDC FMF FDC Date: 10/20/05

Tracking #: EPM 09/721,479 Week Date: 5/9/05

DOC CODE	DOC DATE	MISCELLANEOUS
<input type="checkbox"/> 1449	_____	<input type="checkbox"/> Continuing Data
<input type="checkbox"/> IDS	_____	<input type="checkbox"/> Foreign Priority
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<input type="checkbox"/> IIFW	_____	<input type="checkbox"/> Fees
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<input type="checkbox"/> OATH	_____	
<input type="checkbox"/> 312	_____	
<input type="checkbox"/> SPEC	_____	

[RUSH] MESSAGE: ATTENTION CHIEF DRAFTSPERSON

FIGS. 11C, 11F, 11G, 14D, 14E, 14G, 14H, 17C, 18B, 18E, 21I, 22E
HAS DATE STAMP OVER DATA.

THANK YOU
REM

[XRUSH] RESPONSE: - SEE ATTACHMENTS

- DRAWINGS CORRECTED

INITIALS: SZ

NOTE: This form will be included as part of the official USPTO record, with the Response document coded as XRUSH.
 REV 10/04

662 TGCAATACGTGTGTCACCCAGACAGTCGATTTTCAGCCTTGACCCTACCTTCACCATTGAG
ACGTTATGCACACAGTGGGTCTGTCTAGCTAAAGTCGGAAGTGGGATGGAAGTGGTAACTC

722 ThrIleThrLeuProGlnAspAlaValSerArgThrGlnArgArgGlyArgThrGlyArg
ACAATCACGCTCCCCAAGATGCTGTCTCCCGCACTCAACGTCGGGGCAGGACTGGCAGG
TGTTAGTGGGAGGGGGTTCTACGACAGAGGGCGTGAGTTGCAGCCCCGTCCTGACCGTCC

782 GlyLysProGlyIleTyrArgPheValAlaProGlyGluArgProSerGlyMetPheAsp
GGGAAGCCAGGCATCTACAGATTTGTGGCACCGGGGGAGCGCCCCTCCGGCATGTTTCGAC
CCCTTCGGTCCGTAGATGTCTAAACACCGTGGCCCCCTCGCGGGGAGGCCGTACAAGCTG

822 BGLI, 839 DRD1,

842 SerSerValLeuCysGluCysTyrAspAlaGlyCysAlaTrpTyrGluLeuThrProAla
TCGTCCGTCCTCTGTGAGTGCTATGACGCAGGCTGTGCTTGGTATGAGCTCAGCCCCGCC
AGCAGGCAGGAGACACTCACGATACTGCGTCCGACACGAACCATACTCGAGTGCGGGGCGG

887 SACI,

902 GluThrThrValArgLeuArgAlaTyrMetAsnThrProGlyLeuProValCysGlnAsp
GAGACTACAGTTAGGCTACGAGCGTACATGAACACCCCGGGGCTTCCCGTGTGCCAGGAC
CTCTGATGTCAATCCGATGCTCGCATGTACTTGTGGGGCCCCGAAGGGCACACGGTCTCG

937 SMAI XMAI,

962 HisLeuGluPheTrpGluGlyValPheThrGlyLeuThrHisIleAspAlaHisPheLeu
CATCTTGAATTTTGGGAGGGCGTCTTTACAGGCCTCACTCATATAGATGCCCACTTTCTA
GTAGAACTTAAACCCCTCCCGCAGAAATGTCCGGAGTGAGTATATCTACGGGTGAAAGAT

991 STUI,

1022 SerGlnThrLysGlnSerGlyGluAsnLeuProTyrLeuValAlaTyrGlnAlaThrVal
TCCCAGACAAAGCAGAGTGGGGAGAACCTTCCCTTACCTGGTAGCGTACCAAGCCACCGTG
AGGGTCTGTTTCGTCTCACCCTCTTGAAGGAATGGACCATCGCATGGTTCGGTGGCAC

1075 DRA3,

1082 CysAlaArgAlaGlnAlaProProProSerTrpAspGlnMetTrpLysCysLeuIleArg
TGCGCTAGGGCTCAAGCCCCTCCCCATCGTGGGACCAGATGTGGAAGTGTGTTGATTGCG
ACGCGATCCCGAGTTCGGGGAGGGGGTAGCACCCCTGGTCTACACCTTCACAACTAAGCG

1142 LeuLysProThrLeuHisGlyProThrProLeuLeuTyrArgLeuGlyAlaValGlnAsn
CTCAAGCCCACCCTCCATGGGCCAACCCCCTGCTATACAGACTGGGCGCTGTTTCAAGAT
GAGTTCGGGTGGGAGGTACCCGGTTGTGGGGACGATATGTCTGACCCGCGACAAGTCTTA

1156 NCOI,

1202 GluIleThrLeuThrHisProValThrLysTyrIleMetThrCysMetSerAlaAspLeu
GAAATCACCCCTGACGCACCCAGTCACCAAATACATCATGACATGCATGTCGGCCGACCTG
CTTTAGTGGGACTGCGTGGGTCACTGTTTATGTAGTACTGTACGTACAGCCGGCTGGAC

1236 BSPH1, 1240 DRD1, 1243 AVA3, 1251 EAG1 XMA3, 1256 DRD1,

1262 GluValValThrSerThrTrpValLeuValGlyGlyValLeuAlaAlaLeuAlaAlaTyr
GAGGTCGTACAGACACCTGGGTGCTCGTTGGCGGCGTCCTGGCTGCTTTGGCCGCGTAT
CTCCAGCAGTGCTCGTGGACCCACGAGCAACCGCCGAGGACCGACGAAACCGGCGCATA

FIG. 11B

1322 CysLeuSerThrGlyCysValValIleValGlyArgValValLeuSerGlyLysProAla
TGCCTGTCAACAGGCTGCGTGGTCATAGTGGGCAGGGTCGTCTTGTCCGGGAAGCCGGCA
ACGGACAGTTGTCCGACGCACCAGTATCACCCGTCCCAGCAGAACAGGCCCTTCGGCCGT
1375 NAEI,
1382 IleIleProAspArgGluValLeuTyrArgGluPheAspGluMetGluGluCysSerGln
ATCATACCTGACAGGGAAGTCCTCTACCGAGAGTTTCGATGAGATGGAAGAGTGCTCTCAG
TAGTATGGACTGTCCCTTCAGGAGATGGCTCTCAAGCTACTCTACCTTCTCAGCAGAGTC
1391 DRD1,
1442 HisLeuProTyrIleGluGlnGlyMetMetLeuAlaGluGlnPheLysGlnLysAlaLeu
CACTTACCGTACATCGAGCAAGGGATGATGCTCGCCGAGCAGTTCAAGCAGAAGGCCCTC
GTGAATGGCATGTAGCTCGTTCCTACTACGAGCGGCTCGTCAAGTTCGTCTTCGGGGAG
1502 GlyLeuLeuGlnThrAlaSerArgGlnAlaGluValIleAlaProAlaValGlnThrAsn
GGCCTCCTGCAGACCGCGTCCCGTCAGGCAGAGGTTATCGCCCTGCTGTCCAGACCAAC
CCGGAGGACGTCTGGCGCAGGGCAGTCCGTCTCCAATAGCGGGGACGACAGGTCTGGTTG
1508 PSTI, 1513 TTH3I,
1562 TrpGlnLysLeuGluThrPheTrpAlaLysHisMetTrpAsnPheIleSerGlyIleGln
TGGCAAAACTCGAGACCTTCTGGGCGAAGCATATGTGGAAGTTCATCAGTGGGATACAA
ACCGTTTTTGAGCTCTGGAAGACCCGCTTCGTATACACCTTGAAGTAGTCACCCTATGTT
1571 XHOI, 1592 NDEI,
1622 TyrLeuAlaGlyLeuSerThrLeuProGlyAsnProAlaIleAlaSerLeuMetAlaPhe
TACTTGGCGGGCTTGTCAACGCTGCCTGGTAACCCCGCCATTGCTTCATTGATGGCTTTT
ATGAACCGCCCGAACAGTTGCGACGGACCATTGGGGCGGTAACGAAGTAACTACCGAAAA
1649 BSTE2,
1682 ThrAlaAlaValThrSerProLeuThrThrSerGlnThrLeuLeuPheAsnIleLeuGly
ACAGCTGCTGTCAACAGCCCACTAACCCTAGCCAAACCCCTCTTCAACATATTGGGG
TGTCGACGACAGTGGTGGGTGATTGGTGATCGGTTTGGGAGGAGAAGTTGTATAACCCC
1683 ALWN1 PVU2,
1742 GlyTrpValAlaAlaGlnLeuAlaAlaProGlyAlaAlaThrAlaPheValGlyAlaGly
GGGTGGGTGGCTGCCAGCTCGCCGCCCCCGGTGCCGCTACTGCCTTTGTGGGCGCTGGC
CCCACCCACCGACGGGTGAGCGGGGGGGCCACGGCGATGACGGAAACACCCGCGACCG
1800 ESI,
1802 LeuAlaGlyAlaAlaIleGlySerValGlyLeuGlyLysValLeuIleAspIleLeuAla
TTAGCTGGCGCCGCCATCGGCAGTGTGGACTGGGGAAGGTCCTCATAGACATCCTTGCA
AATCGACCGCGGGGTAGCCGTCAACCTGACCCCTTCCAGGAGTATCTGTAGGAACGT
1808 KAS1 NARI,
1862 GlyTyrGlyAlaGlyValAlaGlyAlaLeuValAlaPheLysIleMetSerGlyGluVal
GGGTATGGCGGGCGGTGGCGGGAGCTCTTGTGGCATTCAAGATCATGAGCGGTGAGGTC
CCCATACCGCGCCCGCACCGCCCTCGAGAACACCGTAAGTTCTAGTACTCGCCACTCCAG

FIG. 11C

3122 IleLeuArgLysSerArgArgPheAlaGlnAlaL uProValTrpAlaArgPr AspTyr
ATCCTGCGGAAGTCTCGGAGATTGCCCCAGGCCCTGCCCGTTTGGGCGCGGCCGACTAT
TAGGACGCCTTCAGAGCCTCTAAGCGGGTCCGGGACGGGCAAACCCGCGCGCCGCTGATA
3149 ALWN1, 3170 EAG1 XMA3,
3182 AsnProProLeuValGluThrTrpLysLysProAspTyrGluProProValValHisGly
AACCCCCGCTAGTGGAGACGTGGAAAAAGCCCGACTACGAACCACCTGTGGTCCATGGC
TTGGGGGGCGATCACCTCTGCACCTTTTTCGGGCTGATGCTTGGTGGACACCAGGTACCG
3223 HGIE2, 3235 NCOI,
3242 CysProLeuProProProLysSerProProValProProProArgLysLysArgThrVal
TGCCCCGCTTCCACCTCCAAAGTCCCCTCCTGTGCCTCCGCCTCGGAAGAGCGGACGGTG
ACGGGCGAAGGTGGAGGTTTCAGGGGAGGACACGGAGGCGGAGCCTTCTTCGCCTGCCAC
3302 ValLeuThrGluSerThrLeuSerThrAlaLeuAlaGluLeuAlaThrArgSerPheGly
GTCCTCACTGAATCAACCCTATCTACTGCCTTGGCCGAGCTCGCCACCAGAAGCTTTGGC
CAGGAGTGACTTAGTTGGGATAGATGACGGAACCGGCTCGAGCGGTGGTCTTCGAAACCG
3338 SACI, 3352 HIND3,
3362 SerSerSerThrSerGlyIleThrGlyAspAsnThrThrThrSerSerGluProAlaPro
AGCTCCTCAACTTCCGGCATTACGGGCGACAATACGACAACATCCTCTGAGCCCCGCCCT
TCGAGGAGTTGAAGGCCGTAATGCCCGCTGTTATGCTGTTGTAGGAGACTCGGGCGGGGA
3422 SerGlyCysProProAspSerAspAlaGluSerTyrSerSerMetProProLeuGluGly
TCTGGCTGCCCCCGACTCCGACGCTGAGTCTTATCCTCCATGCCCCCCTGGAGGGG
AGACCGACGGGGGGCTGAGGCTGCGACTCAGGATAAGGAGGTACGGGGGGGACCTCCCC
3443 EAM11051,
3482 GluProGlyAspProAspLeuSerAspGlySerTrpSerThrValSerSerGluAlaAsn
GAGCCTGGGGATCCGGATCTTAGCGACGGGTATGGTCAACGGTCAGTAGTGAGGCCAAC
CTCGGACCCCTAGGCCTAGAATCGCTGCCAGTACCAGTTGCCAGTCATCACTCCGGTTG
3490 BAMHI, 3491 BSAB1, 3493 BSPE1,
3542 AlaGluAspValValCysCysSerMetSerTyrSerTrpThrGlyAlaLeuValThrPro
GCGGAGGATGTCGTGTGCTCAATGTCTTACTCTTGGACAGGCGCACTCGTCACCCCG
CGCCTCCTACAGCACACGACGAGTTACAGAATGAGAACCTGTCCGCGTGAGCAGTGGGGC
3595 DRA3,
3602 CysAlaAlaGluGluGlnLysLeuProIleAsnAlaLeuSerAsnSerLeuLeuArgHis
TGCGCCGCGGAAGAACAGAACTGCCCATCAATGCACTAAGCAACTCGTTGCTACGTAC
ACGCGCGCCCTTCTTGTCTTTGACGGGTAGTTACGTGATTGTTGAGCAACGATGCAGTG
3606 SAC2, 3617 ALWN1, 3661 PFLM1,
3662 HisAsnLeuValTyrSerThrThrSerArgSerAlaCysGlnArgGlnLysLysValThr
CACAATTTGGTGTATTCCACCACCTACGCACTGCTTGCCAAAGGCAGAGAAAGTCACA
GTGTTAAACCACATAAGGTGGTGGAGTGCGTCACGAACGGTTTCCGTCTTCTTTCAGTGT
3687 DRA3,
PheAspArgLeuGlnValLeuAspSerHisTyrGlnAspValLeuLysGluValLysAla

FIG. 11F

3722 TTTGACAGACTGCAAGTTCTGGACAGCCATTACCAGGACGTACTCAAGGAGGTTAAAGCA
AAACTGTCGTGACGTTCAAGACCTGTCGGTAATGGTCCTGCATGAGTTCCTCCAATTTTCGT

AlaAlaSerLysValLysAlaAsnLeuLeuSerValGluGluAlaCysSerLeuThrPro
3782 GCGGCGTCAAAAGTGAAGGCTAACTTGCTATCCGTAGAGGAAGCTTGACGCTGACGCCC
CGCCGCAGTTTTCACTTCGATTGAACGATAGGCATCTCCTTCGAACGTCGGACTGCGGG
^

3822 HIND3,

ProHisSerAlaLysSerLysPheGlyTyrGlyAlaLysAspValArgCysHisAlaArg
3842 CCACACTCAGCCAAATCCAAGTTTGGTTATGGGGCAAAGACGTCCGTTGCCATGCCAGA
GGTGTGAGTCGGTTTAGGTTCAAACCAATACCCCGTTTTCTGCAGGCAACGGTACGGTCT
^

3881 AAT2, 3896 BGLI,

LysAlaValThrHisIleAsnSerValTrpLysAspLeuLeuGluAspAsnValThrPro
3902 AAGGCCGTAACCCACATCAACTCCGTGTGGAAAGACCTTCTGGAAGACAATGTAACACCA
TTCCGGCATTGGGTGTAGTTGAGGCACACCTTTCTGGAAGACCTTCTGTTACATTGTGGT

IleAspThrThrIleMetAlaLysAsnGluValPheCysValGlnProGluLysGlyGly
3962 ATAGACACTACCATCATGGCTAAGAACGAGGTTTTCTGCGTTGACGCTGAGAAGGGGGGT
TATCTGTGATGGTAGTACCGATTCTTGCTCCAAAGACGCAAGTCGGACTCTTCCCCCA

ArgLysProAlaArgLeuIleValPheProAspLeuGlyValArgValCysGluLysMet
4022 CGTAAGCCAGCTCGTCTCATCGTGTTCCTCGATCTGGGCGTGCAGCGTGTGCGAAAAGATG
GCATTCCGTCGAGCAGAGTAGCACAAGGGGCTAGACCCGCACGCGCACACGCTTTTCTAC

AlaLeuTyrAspValValThrLysLeuProLeuAlaValMetGlySerSerTyrGlyPhe
4082 GCTTTGTACGACGTGGTTACAAAGCTCCCCTTGCCGCTGATGGGAAGCTCCTACGGATT
CGAAACATGCTGCACCAATGTTTCGAGGGGAACCGGCACTACCTTCGAGGATGCCTAAG

GlnTyrSerProGlyGlnArgValGluPheLeuValGlnAlaTrpLysSerLysLysThr
4142 CAATACTCACCAGGACAGCGGGTTGAATTCCTCGTGCAAGCGTGGAAGTCCAAGAAAACC
GTTATGAGTGGTCTGTGCGCCCAACTTAAGGAGCACGTTCCACCTTCAGGTTCTTTTGG
^

4166 ECORI,

ProMetGlyPheSerTyrAspThrArgCysPheAspSerThrValThrGluSerAspIle
4202 CCAATGGGGTTCTCGTATGATACCCGCTGCTTTGACTCCACAGTCACTGAGAGCGCATC
GGTTACCCCAAGAGCATACTATGGGCGACGAACTGAGGTGTCAGTGACTCTCGCTGTAG
^

4235 DRD1, 4242 ALWN1,

ArgThrGluGluAlaIleTyrGlnCysCysAspLeuAspProGlnAlaArgValAlaIle
4262 CGTACGGAGGAGGCAATCTACCAATGTTGTGACCTCGACCCCAAGCCCGTGGCCATC
GCATGCCTCCTCCGTTAGATGGTTACAACACTGGAGCTGGGGGTTGGGGCGCACCGGTAG
^

4307 BGLI, 4314 BALI,

LysSerLeuThrGluArgLeuTyrValGlyGlyProLeuThrAsnSerArgGlyGluAsn
4322 AAGTCCCTCACCGAGAGGCTTTATGTTGGGGGCCCTTTACCAATTCAAGGGGGGAGAAC
TTCAGGGAGTGGCTCTCCGAAATACAACCCCGGGAGAATGGTTAAGTTCCCCCTCTTG
^

4351 APAI,

CysGlyTyrArgArgCysArgAlaSerGlyValLeuThrThrSerCysGlyAsnThrLeu
4382 TGCGGCTATCGCAGGTGCCGCGGAGCGGCGTACTGACAACCTAGCTGTGGTAACACCCCTC

FIG. 11G

1922 ThrGluAspLeuValAsnLeuLeuProAlaIle LeuSerProGlyAlaLeuValValGly
ACGGAGGACCTGGTCAATCTACTGCCCGCCATCCTCTCGCCCGGAGCCCTCGTAGTCGGC
TGCTCCTGGACCAGTTAGATGACGGGCGGTAGGAGAGCGGGCCTCGGGAGCATCAGCCG
1928 TTH3I,
1982 ValValCysAlaAlaIleLeuArgArgHisValGlyProGlyGluGlyAlaValGlnTrp
GTGGTCTGTGCAGCAATACTGCGCCGGCACGTTGGCCCGGGCGAGGGGGCAGTGCACTGG
CACCAGACACSTCGTTATGACGCGGCGGTGCAACCGGGCCCGTCCCCCGTCACGTCACC
2004 NAEI, 2017 SMAI XMAI,
2042 MetAsnArgLeuIleAlaPheAlaSerArgGlyAsnHisValSerProThrHisTyrVal
ATGAACCGGTGATAGCCTTCGCCTCCCGGGGAACCATGTTCCCCACGCACTACGTG
TACTTGGCCGACTATCGGAAGCGGAGGGCCCCCTTGGTACAAAGGGGGTGCGTGATGCAC
2067 SMAI XMAI, 2093 DRA3,
2102 ProGluSerAspAlaAlaAlaArgValThrAlaIleLeuSerSerLeuThrValThrGln
CCGGAGAGCGATGCAGCTGCCCGCGTCACTGCCATACTCAGCAGCCTCACTGTAACCCAG
GGCCTCTCGCTACGTCGACGGGCGCAGTGACGGTATGAGTCGTCGGAGTGACATTGGGTC
2115 PVU2, 2159 ALWN1,
2162 LeuLeuArgArgLeuHisGlnTrpIleSerSerGluCysThrThrProCysSerGlySer
CTCCTGAGGCGACTGCACCACTGGATAAGCTCGGAGTGTAACCACTCCATGCTCCGGTTCC
GAGGACTCCGCTGACGTGGTCACCTATTCGAGCCTCACATGGTGAGGTACGAGGCCAAGG
2164 MST2, 2220 ECON1,
2222 TrpLeuArgAspIleTrpAspTrpIleCysGluValLeuSerAspPheLysThrTrpLeu
TGGCTAAGGGACATCTGGGACTGGATATGCGAGGTGTTGAGCGACTTTAAGACCTGGCTA
ACCGATTCCCTGTAGACCCTGACCTATACGCTCCACAACCTCGCTGAAATTCTGGACCGAT
2282 LysAlaLysLeuMetProGlnLeuProGlyIleProPheValSerCysGlnArgGlyTyr
AAAGCTAAGCTCATGCCACAGCTGCCTGGGATCCCTTTGTGTCTGCCAGCGCGGGTAT
TTTCGATTTCGAGTACGGTGTGACGGACCCTAGGGGAAACACAGGACGGTCGCGCCCAT
2285 ESP1, 2300 PVU2, 2310 BAMHI,
2342 LysGlyValTrpArgGlyAspGlyIleMetHisThrArgCysHisCysGlyAlaGluIle
AAGGGGGTCTGGCGAGGGGACGGCATCATGCACACTCGCTGCCACTGTGGAGCTGAGATC
TTCCCCCAGACCGCTCCCCTGCCGTAGTACGTGTGAGCGACGGTGACACCTCGACTCTAG
2402 ThrGlyHisValLysAsnGlyThrMetArgIleValGlyProArgThrCysArgAsnMet
ACTGGACATGTCAAAAACGGGACGATGAGGATCGTCGGTCCTAGGACCTGCAGGAACATG
TGACCTGTACAGTTTTTGGCCCTGCTACTCCTAGCAGCCAGGATCCTGGACGTCCTTGAC
2425 BSAB1, 2441 AVR2, 2448 SSE83871, 2449 PSTI,
2462 TrpSerGlyThrPheProIleAsnAlaTyrThrThrGlyProCysThrProLeuProAla
TGGAGTGGGACCTTCCCCATTAAATGCCTACACCACGGGCCCCCTGTACCCCCCTTCTGCG
ACCTCACCTGGAAGGGGTAATTACGGATGTGGTGCCCGGGGACATGGGGGGAAGGACGC
2460 ASE1, 2497 APAI,
ProAsnTyrThrPheAlaLeuTrpArgValSerAlaGluGluTyrValGluIleArgGln

FIG. 14D

2522 CCGAACTACACGTTTCGCGCTATGGAGGGTGTCTGCAGAGGAATACGTGGAGATAAAGGCAG
GGCTTGATGTGCAAGCGCGATACCTCCCACAGACGTCTCCTTATGCACCTCTATTCCGTC
2553 PSTI,
ValGlyAspPheHisTyrValThrGlyMetThrThrAspAsnLeuLysCysProCysGln
2582 GTGGGGGACTTCCACTACGTGACGGGTATGACTACTGACAATCTTAAATGCCCGTGCCAG
CACCCCTGAAGGTGATGCACTGCCCATACTGATGACTGTTAGAATTTACGGGCACGGTC
2594 DRA3,
ValProSerProGluPhePheThrGluLeuAspGlyValArgLeuHisArgPheAlaPro
2642 GTCCCATCGCCGAATTTTTCACAGAATTGGACGGGGTGCGCCTACATAGGTTTGCGCCC
CAGGGTAGCGGGCTTAAAAAGTGTCTTAACCTGCCCCACGCGGATGTATCCAAACGCGGG
ProCysLysProLeuLeuArgGluGluValSerPheArgValGlyLeuHisGluTyrPro
2702 CCCTGCAAGCCCTTGCTGCGGGAGGAGGTATCATTAGAGTAGGACTCCACGAATACCCG
GGGACGTTTCGGGAACGACGCCCTCCTCCATAGTAAGTCTCATCCTGAGGTGCTTATGGGC
2757 HGIE2,
ValGlySerGlnLeuProCysGluProGluProAspValAlaValLeuThrSerMetLeu
2762 GTAGGGTCGCAATTACCTTGCGAGCCCGAACCGGACGTGGCCGTGTTGACGTCCATGCTC
CATCCAGCGTTAATGGAACGCTCGGGCTTGGCCTGCACCGGCACAATGCAGGTACGAG
2809 AAT2,
ThrAspProSerHisIleThrAlaGluAlaAlaGlyArgArgLeuAlaArgGlySerPro
2822 ACTGATCCCTCCCATATAACAGCAGAGGCGGCCGGCGAAGGTTGGCGAGGGGATCACCC
TGACTAGGGAGGGTATATTGTCGTCTCCGCCGGCCCGCTTCCAACCGCTCCCTAGTGGG
2850 EAG1 XMA3,
ProSerValAlaSerSerSerAlaSerGlnLeuSerAlaProSerLeuLysAlaThrCys
2882 CCCTCTGTGGCCAGCTCCTCGGCTAGCCAGCTATCCGCTCCATCTCTCAAGGCAACTTGC
GGGAGACACCGGTCGAGGAGCCGATCGGTTCGATAGGCGAGGTAGAGAGTTCCGTTGAACG
2889 BALI, 2903 NHEI,
ThrAlaAsnHisAspSerProAspAlaGluLeuIleGluAlaAsnLeuLeuTrpArgGln
2942 ACCGCTAACCATGACTCCCTGATGCTGAGCTCATAGAGGCCAACCTCCTATGGAGGCAG
TGGCGATTGGTACTGAGGGGACTACGACTCGAGTATCTCCGGTTGGAGGATACCTCCGTC
2966 ESP1, 2969 SACI,
GluMetGlyGlyAsnIleThrArgValGluSerGluAsnLysValValIleLeuAspSer
3002 GAGATGGGCGGCAACATCACCAGGGTTGAGTCAGAAAACAAAGTGGTGATTCTGGACTCC
CTCTACCCGCCGTTGTAGTGGTCCCAACTCAGTCTTTTGTTCACCACTAAGACCTGAGG
3062 PheAspProLeuValAlaGluGluAspGluArgGluIleSerValProAlaGluIleLeu
TTCGATCCGCTTGTGGCGGAGGAGGACGAGCGGGAGATCTCCGTACCCGCAGAAATCCTG
AAGCTAGGCGAACACCGCCTCCTCCTGCTCGCCCTCTAGAGGCATGGGCGTCTTTAGGAC
3096 BGL2,
ArgLysSerArgArgPheAlaGlnAlaLeuProValTrpAlaArgProAspTyrAsnPro
3122 CGGAAGTCTCGGAGATTCGCCCAGGCCCTGCCCGTTTGGGCGCGGCCGACTATAACCCC

FIG. 14E

3782 SerLysValLysAlaAsnLeuLeuSerValGluGluAlaCysS rLeuThrProProHis
TCAAAAGTGAAGGCTAACTTGCTATCCGTAGAGGAAGCTTGCAGCCTGACGCCCCACAC
AGTTTTCACTTCCGATTGAACGATAGGCATCTCCTTCGAACGTCGGACTGCGGGGGTGTG
3816 HIND3,

3842 SerAlaLysSerLysPheGlyTyrGlyAlaLysAspValArgCysHisAlaArgLysAla
TCAGCCAAATCCAAGTTTGGTTATGGGGCAAAGACGTCCGTTGCCATGCCAGAAAGGCC
AGTCGGTTTAGGTTCAAACCAATACCCCGTTTTCTGCAGGCAACGGTACGGTCTTTCCGG
3875 AAT2, 3890 BGLI,

3902 ValThrHisIleAsnSerValTrpLysAspLeuLeuGluAspAsnValThrProIleAsp
GTAACCCACATCAACTCCGTGTGGAAAGACCTTCTGGAAGACAATGTAACACCAATAGAC
CATTGGGTGTAGTTGAGGCACACCTTTCTGGAAGACCTTCTGTTACATTGTGGTTATCTG

3962 ThrThrIleMetAlaLysAsnGluValPheCysValGlnProGluLysGlyGlyArgLys
ACTACCATCATGGCTAAGAACGAGGTTTTCTGCGTTTCAGCCTGAGAAGGGGGGTGTAAG
TGATGGTAGTACCGATTCTTGCTCCAAAGACGCAAGTCGGACTCTTCCCCCAGCATTC

4022 ProAlaArgLeuIleValPheProAspLeuGlyValArgValCysGluLysMetAlaLeu
CCAGCTCGTCTCATCGTGTTCCTCGATCTGGGCGTGCGCGTGTGCGAAAGATGGCTTTG
GGTCGAGCAGAGTAGCACAAAGGGCTAGACCCGCACGCGCACACGCTTTTCTACCGAAAC

4082 TyrAspValValThrLysLeuProLeuAlaValMetGlySerSerTyrGlyPheGlnTyr
TACGACGTGGTTACAAAGCTCCCCTTGCCGTGATGGGAAGCTCCTACGGATTCCAATAC
ATGCTGCACCAATGTTTCGAGGGGAACCGGCACTACCCTTCGAGGATGCCTAAGGTTATG

4142 SerProGlyGlnArgValGluPheLeuValGlnAlaTrpLysSerLysLysThrProMet
TCACCAGGACAGCGGGTTGAATTCCTCGTGCAAGCGTGGAAGTCCAAGAAAACCCCAATG
AGTGGTCTGTCGCCCACTTAAGGAGCACGTTTCGCACCTTCAGGTTCTTTGGGGTTAC
4160 ECORI,

4202 GlyPheSerTyrAspThrArgCysPheAspSerThrValThrGluSerAspIleArgThr
GGGTTCTCGTATGATACCCGCTGCTTTGACTCCACAGTCACTGAGAGCGACATCCGTACG
CCCAAGAGCATACTATGGGCGACGAACTGAGGTGTCAGTGACTCTCGCTGTAGGCATGC
4229 DRD1, 4236 ALWN1,

4262 GluGluAlaIleTyrGlnCysCysAspLeuAspProGlnAlaArgValAlaIleLysSer
GAGGAGGCAATCTACCAATGTTGTGACCTCGACCCCAAGCCCGGTGGCCATCAAGTCC
CTCCTCCGTTAGATGGTTACAACACTGGAGCTGGGGGTTTCGGGCGCACCGGTAGTTCAGG
4301 BGLI, 4308 BALI,

4322 LeuThrGluArgLeuTyrValGlyGlyProLeuThrAsnSerArgGlyGluAsnCysGly
CTCACCAGAGAGGCTTTATGTTGGGGGCCCTCTTACCAATTCAAGGGGGGAGAAGTGGCGC
GAGTGGCTCTCCGAAATACAACCCCGGGAGAATGGTTAAGTTCCTTCTTGACGCCG
4345 APAI,

4382 TyrArgArgCysArgAlaSerGlyValLeuThrThrSerCysGlyAsnThrLeuThrCys
TATCGAGGTGCCGCGCGAGCGGCGTACTGACAACTAGCTGTGGTAACACCCCTCACTTGC
ATAGCGTCCACGGCGCGCTCGCCGCATGACTGTTGATCGACACCATTGTGGGAGTGAACG

FIG. 14G

4442 TyrIleLysAlaArgAlaAlaCysArgAlaAlaGlyLeuGlnAspCysThrMetLeuVal
TACATCAAGGCCCGGGCAGCCTGTTCGAGCCGCGGGCTCCAGGACTGCACCATGCTCGTG
ATGTAGTTCCGGGGCCGTCGGACAGCTCGGCGTCCCGAGGTCTTGACGTGGTACGAGCAC
4452 SMAI XMAI,
CysGlyAspAspLeuValValIleCysGluSerAlaGlyValGlnGluAspAlaAlaSer
4502 TGTGGCGACGACTTAGTCGTTATCTGTGAAAGCGCGGGGTCCAGGAGGACGCGGCGAGC
ACACCGCTGCTGAATCAGCAATAGACACTTTCGCGCCCCCAGGTCTCTCTGCGCCGCTCG
4508 DRD1, 4511 TTH3I,
LeuArgAlaPheThrGluAlaMetThrArgTyrSerAlaProProGlyAspProProGln
4562 CTGAGAGCCTTCACGGAGGCTATGACCAGGTACTCCGCCCCCCTGGGGACCCCCACAA
GACTCTCGGAAGTGCCTCCGATACTGGTCCATGAGGCGGGGGGACCCCTGGGGGGTGT
ProGluTyrAspLeuGluLeuIleThrSerCysSerSerAsnValSerValAlaHisAsp
4622 CCAGAATACGACTTGGAGCTCATAACATCATGCTCCTCCAACGTGTGTCAGTCGCCCACGAC
GGTCTTATGCTGAACCTCGAGTATTGTAGTACGAGGAGGTTGCACAGTCAGCGGGTGTG
4637 SACI,
GlyAlaGlyLysArgValTyrTyrLeuThrArgAspProThrThrProLeuAlaArgAla
4682 GCGCTGGAAAGAGGGTCTACTACCTCACCCGTGACCCTACAACCCCCCTCGCGAGAGCT
CCGCGACCTTTCTCCAGATGATGGAGTGGGCACTGGGATGTTGGGGGAGCGCTCTCGA
4731 NRUI,
AlaTrpGluThrAlaArgHisThrProValAsnSerTrpLeuGlyAsnIleIleMetPhe
4742 GCGTGGGAGACAGCAAGACACACTCCAGTCAATTCTGGCTAGGCAACATAATCATGTT
CGCACCTCTGTCTGTTCTGTGTGAGGTCAGTTAAGGACCGATCCGTTGTATTAGTACAAA
AlaProThrLeuTrpAlaArgMetIleLeuMetThrHisPhePheSerValLeuIleAla
4802 GCGGCGACCTGTGGGCGAGGATGATACTGATGACCCATTTCTTTAGCGTCCTTATAGCC
CGGGGGTGTGACACCCGCTCCTACTATGACTACTGGGTAAAGAAATCGCAGGAATATCGG
4806 PFLM1, 4807 DRA3,
ArgAspGlnLeuGluGlnAlaLeuAspCysGluIleTyrGlyAlaCysTyrSerIleGlu
4862 AGGGACAGCTTGAACAGGCCCTCGATTGCGAGATCTACGGGGCTGCTACTCCATAGAA
TCCCTGGTCAACTTGTCCGGGAGCTAACGCTCTAGATGCCCCGACGATGAGGTATCTT
4893 BGL2,
ProLeuAspLeuProProIleIleGlnArgLeuHisGlyLeuSerAlaPheSerLeuHis
4922 CCACTGGATCTACCTCCAATCATTCAAAGACTCCATGGCCTCAGCGCATTTTCACTCCAC
GGTGACCTAGATGGAGGTTAGTAAGTTTCTGAGGTACCGGAGTCGCGTAAAAGTGAGGTG
4954 NCOI,
SerTyrSerProGlyGluIleAsnArgValAlaAlaCysLeuArgLysLeuGlyValPro
4982 AGTTACTCTCCAGGTGAAATCAATAGGTTGGCCGCATGCCTCAGAAAACCTGGGGTACCG
TCAATGAGAGGTCCACTTTAGTTATCCACCGCGTACGGAGTCTTTTGAACCCCATGGC
5015 SPHI, 5035 KPNI,
ProLeuArgAlaTrpArgHisArgAlaArgSerValArgAlaArgLeuLeuAlaArgGly

FIG. 14H

TCCCGAGTTCGGGGAGGGGGTAGCACCTGGTCTACACCTTCACAACTAAGCGGAGTTC
1142 ProThrLeuHisGlyProThrProLeuLeuTyrArgLeuGlyAlaValGlnAsnGluIle
CCCACCTCCATGGGCCAACACCCCTGCTATACAGACTGGGCGCTGTTTCAAGATGAAATC
GGGTGGGAGGTACCCGGTTGTGGGGACGATATGTCTGACCCGCGACAAGTCTTACTTTAG
1150 NCOI,
1202 ThrLeuThrHisProValThrLysTyrIleMetThrCysMetSerAlaAspLeuGluVal
ACCCTGACGCACCCAGTCACCAAATACATCATGACATGCATGTCGGCCGACCTGGAGGTC
TGGGACTGCGTGGGTGAGTGGTTTATGTAGTACTGTACGTACAGCCGGCTGGACCTCCAG
1230 BSPH1, 1234 DRD1, 1237 AVA3, 1245 EAG1 XMA3, 1250 DRD1,
1262 ValThrSerThrTrpValLeuValGlyGlyValLeuAlaAlaLeuAlaAlaTyrCysLeu
GTCACGAGCACCTGGGTGCTCGTTGGCGGCGTCCTGGCTGCTTTGGCCGCGTATTGCCTG
CAGTGCTCGTGGACCCACGAGCAACCGCCGAGGACCGACGAAACCGGCGCATAACGGAC
1322 SerThrGlyCysValValIleValGlyArgValValLeuSerGlyLysProAlaIleIle
TCAACAGGCTGCGTGGTCATAGTGGGCAGGGTCGTCTTGTCGGGAAGCCGGCAATCATA
AGTTGTCCGACGCACCAAGTATCACCCGTCCAGCAGAACAGGCCCTTCGGCCGTTAGTAT
1369. NAEI,
1382 ProAspArgGluValLeuTyrArgGluPheAspGluMetGluGluCysSerGlnHisLeu
CCTGACAGGGAAGTCCTCTACCGAGAGTTCGATGAGATGGAAGAGTGCTCTCAGCACTTA
GGACTGTCCCTTCAGGAGATGGCTCTCAAGCTACTCTACCTTCTCAGGAGAGTCGTGAAT
1385 DRD1,
1442 ProTyrIleGluGlnGlyMetMetLeuAlaGluGlnPheLysGlnLysAlaLeuGlyLeu
CCGTACATCGAGCAAGGGATGATGCTCGCCGAGCAGTTCAAGCAGAAGGCCCTCGGCCCTC
GGCATGTAGCTCGTTCCTACTACGAGCGGCTCGTCAAGTTCGTCTTCGGGAGCCGGAG
1502 LeuGlnThrAlaSerArgGlnAlaGluValIleAlaProAlaValGlnThrAsnTrpGln
CTGCAGACCGCGTCCCGTCAGGCAGAGGTTATCGCCCTGCTGTCCAGACCAACTGGCAA
GACGTCTGGCGCAGGGCAGTCCGTCTCAATAGCGGGGACGACAGGTCTGGTTGACCGTT
1502 PSTI, 1507 TTH3I,
1562 LysLeuGluThrPheTrpAlaLysHisMetTrpAsnPheIleSerGlyIleGlnTyrLeu
AAACTCGAGACCTTCTGGGCGAAGCATATGTGGAACCTTCATCAGTGGGATACAATACTTG
TTTGAGCTCTGGAAGACCCGCTTCGTATACACCTTGAAGTAGTCACCTATGTTATGAAC
1565 XHOI, 1586 NDEI,
1622 AlaGlyLeuSerThrLeuProGlyAsnProAlaIleAlaSerLeuMetAlaPheThrAla
GCGGGCTTGTCACGCTGCCTGGTAACCCCGCCATTGCTTCATTGATGGCTTTTACAGCT
CGCCCGAACAGTTGCGACGGACCATTTGGGGCGGTAACGAAGTAACTACCGAAAATGTCCA
1643 BSTE2, 1677 ALWN1 PVU2,
1682 AlaValThrSerProLeuThrThrSerGlnThrLeuLeuPheAsnIleLeuGlyGlyTrp
GCTGTCAACAGCCCACTAACCCTAGCCAAACCTCCTCTTCAACATATTGGGGGGGTGG
CGACAGTGGTGGGTGATTGGTGATCGGTTTGGGAGGAGAAGTTGTATAACCCCCCACC

FIG. 17C

- 1742 ValAlaAlaGlnLeuAlaAlaPr GlyAlaAlaThrAlaPheValGlyAlaGlyLeuAla
GTGGCTGCCCAGCTCGCCGCCCGGTGCCGCTACTGCCTTTGTGGGCGCTGGCTTAGCT
CACCAGCGGGTCGAGCGGGGGGCCACGGCGATGACGGAAACACCCGCGACCGAATCGA
1794 ESP1,
- 1802 GlyAlaAlaIleGlySerValGlyLeuGlyLysValLeuIleAspIleLeuAlaGlyTyr
GGCGCCGCCATCGGCAGTGTGGACTGGGGAAGGTCTCATAGACATCCTTGCAGGGTAT
CCGCGGCGGTAGCCGTCACAACCTGACCCCTTCCAGGAGTATCTGTAGGAACGTCCCAT
1802 KAS1 NARI,
- 1862 GlyAlaGlyValAlaGlyAlaLeuValAlaPheLysIleMetSerGlyGluValProSer
GGCGCGGGCGTGGCGGGAGCTCTTGTGGCATTCAAGATCATGAGCGGTGAGGTCCCCCTCC
CCGCGCCCGCACCCGCCCTCAGAACACCGTAAGTTCTAGTACTCGCCACTCCAGGGGAGG
1878 SACI, 1899 BSPH1,
- 1922 ThrGluAspLeuValAsnLeuLeuProAlaIleLeuSerProGlyAlaLeuValValGly
ACGGAGGACCTGGTCAATCTACTGCCCGCCATCCTCTCGCCCGAGCCCTCGTAGTCGGC
TGCTCTCGGACCAGTTAGATGACGGGCGGTAGGAGAGCGGGCCTCGGGAGCATCAGCCG
1928 TTH3I,
- 1982 ValValCysAlaAlaIleLeuArgArgHisValGlyProGlyGluGlyAlaValGlnTrp
GTGGTCTGTGCAGCAATACTGCGCCGGCACGTTGGCCCGGGCGAGGGGGCAGTGCAGTGG
CACCAGACACGTCGTTATGACGGGCGGTGCAACCGGGGCCGCTCCCCCGTCACGTCACC
2004 NAEI, 2017 SMAI XMAI,
- 2042 MetAsnArgLeuIleAlaPheAlaSerArgGlyAsnHisValSerProThrHisTyrVal
ATGAACCGGCTGATAGCCTTCGCCTCCCGGGGAACCATGTTTCCCCACGCACTACGTG
TACTTGGCCGACTATCGGAAGCGGAGGGCCCCCTTGGTACAAAGGGGTGCGTGATGCAC
2067 SMAI XMAI, 2093 DRA3,
- 2102 ProGluSerAspAlaAlaAlaArgValThrAlaIleLeuSerSerLeuThrValThrGln
CCGGAGAGCGATGCAGCTGCCCGCGTCACTGCCATACTCAGCAGCCTCACTGTAACCCAG
GGCCTCTCGCTACGTCGACGGGCGCAGTGACGGTATGAGTCGTCGGAGTGACATTGGGTC
2115 PVU2, 2159 ALWN1,
- 2162 LeuLeuArgArgLeuHisGlnTrpIleSerSerGluCysThrThrProCysSerGlySer
CTCCTGAGGCGACTGCACCACTGGATAAGCTCGGAGTGTACCACTCCATGCTCCGGTTCC
GAGGACTCCGCTGACGTGGTCACCTATTCGAGCCTCACATGGTGAGGTACGAGGCCAAGG
2164 MST2, 2220 ECON1,
- 2222 TrpLeuArgAspIleTrpAspTrpIleCysGluValLeuSerAspPheLysThrTrpLeu
TGGCTAAGGGACATCTGGGACTGGATATGCGAGGTGTTGAGCGACTTTAAGACCTGGCTA
ACCGATTCCCTGTAGACCCTGACCTATACGCTCCACAACCTCGCTGAAATTCTGACCGAT
2282 LysAlaLysLeuMetProGlnLeuProGlyIleProPheValSerCysGlnArgGlyTyr
AAAGCTAAGCTCATGCCACAGCTGCCTGGGATCCCCTTTGTGTCTGCCAGCGCGGGTAT
TTTCGATTGAGTACGGGTGTCGACGGACCCTAGGGGAAACACAGGACGGTGCGCCCCATA
2285 ESP1, 2300 PVU2, 2310 BAMHI,

FIG. 17D

662 ThrCysValThrGlnThrValAspPheSerLeuAspPr ThrPheThrIleGluThrIle
ACGTGTGTCAACCAGACAGTCGATTTTCAGCCTTGACCCTACCTTCACCATTGAGACAATC
TGCACACAGTGGGTCTGTCACTAAAGTCGGAAGTGGGATGGAAGTGGTAACTCTGTAG

722 ThrLeuProGlnAspAlaValSerArgThrGlnArgArgGlyArgThrGlyArgGlyLys
ACGCTCCCCAAGATGCTGTCTCCCGCACTCAACGTCGGGGCAGGACTGGCAGGGGGAAG
TGCGAGGGGGTTCTACGACAGAGGGCGTGAGTTGCAGCCCCGTCCTGACCCTCCCCCTTC

782 ProGlyIleTyrArgPheValAlaProGlyGluArgProSerGlyMetPheAspSerSer
CCAGGCATCTACAGATTTGTGGCACCGGGGGAGCGCCCCCTCCGGCATGTTGACTCGTCC
GGTCCGTAGATGTCTAAACACCGTGGCCCCCTCGCGGGGAGGCGGTACAAGCTGAGCAGG

816 BGLI, 833 DRD1,

842 ValLeuCysGluCysTyrAspAlaGlyCysAlaTrpTyrGluLeuThrProAlaGluThr
GTCCTCTGTGAGTGCTATGACGCAGGCTGTGCTTGGTATGAGCTCACGCCCGCGAGACT
CAGGAGACACTCACGATACTGCGTCCGACACGAACCATACTCGAGTGGGGCGGCTCTGA

881 SACI,

902 ThrValArgLeuArgAlaTyrMetAsnThrProGlyLeuProValCysGlnAspHisLeu
ACAGTTAGGCTACGAGCGTACATGAACACCCCGGGGCTTCCCGTGTGCCAGGACCATCTT
TGTCATCCGATGCTCGCATGTACTTGTGGGGCCCCGAAGGGCACACGGTCTGTGTAGAA

931 SMAI XMAI,

962 GluPheTrpGluGlyValPheThrGlyLeuThrHisIleAspAlaHisPheLeuSerGln
GAATTTTGGGAGGGCGTCTTTACAGGCCTCACTCATATAGATGCCCACTTTCTATCCAG
CTTAAACCCTCCCGCAGAAATGTCCGGAGTGAGTATATCTACGGGTGAAAGATAGGGTC

985 STUI,

1022 ThrLysGlnSerGlyGluAsnLeuProTyrLeuValAlaTyrGlnAlaThrValCysAla
ACAAAGCAGAGTGGGGAGAACCTTCCTTACCTGGTAGCGTACCAAGCCACCGTGTGCGCT
TGTTTCGTCTCACCCTCTTGGGAAGGAATGGACCATCGCATGGTTCGGTGGCACACGCGA

1069 DRA3,

1082 ArgAlaGlnAlaProProProSerTrpAspGlnMetTrpLysCysLeuIleArgLeuLys
AGGGCTCAAGCCCTCCCCATCGTGGGACCAGATGTGGAAGTGTGTTGATTCGCCTCAAG
TCCCGAGTTCGGGGAGGGGTAGCACCTGGTCTACACCTTCACAACTAAGCGGAGTTC

1142 ProThrLeuHisGlyProThrProLeuLeuTyrArgLeuGlyAlaValGlnAsnGluIle
CCCACCCTCCATGGGCCAACACCCCTGCTATACAGACTGGGCGCTGTTGAGAATGAAATC
GGGTGGGAGGTACCCGTTGTGGGGACGATATGTCTGACCCGCGACAAGTCTTACTTTAG

1150 NCOI,

1202 ThrLeuThrHisProValThrLysTyrIleMetThrCysMetSerAlaAspLeuGluVal
ACCCTGACGCACCCAGTCACCAATACATCATGACATGCATGTCGGCCGACCTGGAGGTC
TGGGACTGCGTGGGTCACTGGTTTATGTAGTACTGTACGTACAGCCGGCTGGACCTCCAG

1230 BSPH1, 1234 DRD1, 1237 AVA3, 1245 EAG1 XMA3, 1250 DRD1,

1262 ValThrSerThrTrpValLeuValGlyGlyValLeuAlaAlaLeuAlaAlaTyrCysLeu
GTCACGAGCACCTGGGTGCTCGTTGGCGGCGTCTGGCTGCTTTGGCCGCGTATTGCCTG

FIG. 18B

2522 ProAsnTyrThrPheAlaLeuTrpArgValSerAlaGluGluTyrValGluIleArgGln
CCGAACCTACACGTTTCGCGCTATGGAGGGTGTCTGCAGAGGAATACGTGGAGATAAGGCAG
GGCTTGATGTGCAAGCGCGATACCTCCCACAGACGTCTCCTTATGCACCTCTATTCCGTC
2553 PSTI,
2582 ValGlyAspPheHisTyrValThrGlyMetThrThrAspAsnLeuLysCysProCysGln
GTGGGGGACTTCCACTACGTGACGGGTATGACTACTGACAATCTTAAATGCCCGTGCCAG
CACCCCTGAAGGTGATGCACTGCCATACTGATGACTGTTAGAATTTACGGGCACGGTC
2594 DRA3,
2642 ValProSerProGluPhePheThrGluLeuAspGlyValArgLeuHisArgPheAlaPro
GTCCCATCGCCCGAATTTTTCACAGAATTGGACGGGGTGCGCCTACATAGGTTTGCGCC
CAGGGTAGCGGGCTTAAAAAGTGTCTTAACCTGCCCCACGCGGATGTATCCAAACGCGGG
2702 ProCysLysProLeuLeuArgGluGluValSerPheArgValGlyLeuHisGluTyrPro
CCCTGCAAGCCCTTGCTGCGGGAGGAGGTATCATTAGAGTAGGACTCCACGAATACCCG
GGGACGTTTCGGGAACGACGCCCTCCTCCATAGTAAGTCTCATCCTGAGGTGCTTATGGGC
2757 HGIE2,
2762 ValGlySerGlnLeuProCysGluProGluProAspValAlaValLeuThrSerMetLeu
GTAGGGTCGCAATTACCTTGCGAGCCCGAACCGGACGTGGCCGTGTTGACGTCCATGCTC
CATCCAGCGTTAATGGAACGCTCGGGCTTGGCCTGCACCGGCACAACCTGCAGGTACGAG
2809 AAT2,
2822 ThrAspProSerHisIleThrAlaGluAlaAlaGlyArgArgLeuAlaArgGlySerPro
ACTGATCCCTCCCATATAACAGCAGAGGCGGCGGCGGAAGGTTGGCGAGGGGATCACCC
TGACTAGGGAGGGTATATTGTCGTCTCCGCCGCCCGCTTCCAACCGCTCCCTAGTGGG
2850 EAG1 XMA3,
2882 ProSerValAlaSerSerSerAlaSerGlnLeuSerAlaProSerLeuLysAlaThrCys
CCCTCTGTGGCCAGCTCCTCGGCTAGCCAGCTATCCGCTCCATCTCTCAAGGCAACTTGC
GGGAGACACCGGTCGAGGAGCCGATCGGTTCGATAGGCGAGGTAGAGAGTTCCGTTGAACG
2889 BALI, 2903 NHEI,
2942 ThrAlaAsnHisAspSerProAspAlaGluLeuIleGluAlaAsnLeuLeuTrpArgGln
ACCGCTAACCATGACTCCCCTGATGCTGAGCTCATAGAGGCCAACCTCCTATGGAGGCAG
TGGCGATTGGTACTGAGGGGACTACGACTCGAGTATCTCCGGTTGGAGGATACCTCCGTC
2966 ESP1, 2969 SACI,
3002 GluMetGlyGlyAsnIleThrArgValGluSerGluAsnLysValValIleLeuAspSer
GAGATGGGCGGCACATCACCAGGGTTGAGTCAGAAAACAAAGTGGTGATTCTGGACTCC
CTCTACCCGCCGTTGTAGTGGTCCCAACTCAGTCTTTTGTTCACCACTAAGACCTGAGG
3062 PheAspProLeuValAlaGluGluAspGluArgGluIleSerValProAlaGluIleLeu
TTCGATCCGCTTGTGGCGGAGGAGGACGAGCGGGAGATCTCCGTACCCGCAGAAATCCTG
AAGCTAGGCGAACACCGCCTCCTCCTGCTCGCCCTCTAGAGGCATGGGCGTCTTTAGGAC
3096 BGL2,
ArgLysSerArgArgPheAlaGlnAlaLeuProValTrpAlaArgProAspTyrAsnPro

FIG. 18E

5042 ProLeuArgAlaTrpArgHisArgAlaArgSerValArgAlaArgLeuLeuAlaArgGly
CCCTTGCGAGCTTGGAGACACCGGGCCCGGAGCGTCCGCGCTAGGCTTCTGGCCAGAGGA
GGGAACGCTCGAACCTCTGTGGCCCGGGCTCGCAGGCGCGATCCGAAGACCGGTCTCCT
5064 APAI, 5091 BALI,
5102 GlyArgAlaAlaIleCysGlyLysTyrLeuPheAsnTrpAlaValArgThrLysLeuLys
GGCAGGGCTGCCATATGTGGCAAGTACCTCTTCAACTGGGCAGTAAGAACAAGCTCAAA
CCGTCCCGACGGTATACACCGTTTCATGGAGAAGTTGACCGGTCATTCTTGTTCGAGTTT
5113 NDEI,
5162 LeuThrProIleAlaAlaAlaGlyGlnLeuAspLeuSerGlyTrpPheThrAlaGlyTyr
CTCACTCCAATAGCGGCCGCTGGCCAGCTGGACTTGTCCGGCTGGTTCACGGCTGGCTAC
GAGTGAGGTTATCGCCGGCGACCGGTCGACCTGAACAGGCCGACCAAGTGCCGACCGATG
5174 NOTI, 5175 EAGI XMA3, 5182 BALI, 5186 PVU2,
5222 SerGlyGlyAspIleTyrHisSerValSerHisAlaArgProArgTrpIleTrpPheCys
AGCGGGGGAGACATTTATCACAGCGTGTCTCATGCCCGGCCCGCTGGATCTGGTTTTGC
TCGCCCCCTCTGTAAATAGTGTGCGACAGAGTACGGGCCGGGGCGACCTAGACCAAACG
5240 DRA3,
5282 LeuLeuLeuLeuAlaAlaGlyValGlyIleTyrLeuLeuProAsnArgMetSerThrAsn
CTACTCCTGCTTGCTGCAGGGGTAGGCATCTACCTCCTCCCCAACCGAATGAGCACGAAT
GATGAGGACGAACGACGTCCCCATCCGTAGATGGAGGAGGGGTGGCTTACTCGTGCTTA
5295 PSTI,
5342 ProLysProGlnArgLysThrLysArgAsnThrAsnArgArgProGlnAspValLysPhe
CCTAAACCTCAAAGAAAGACCAACGTAACACCAACCGGCGGCCGAGGACGTCAAGTTC
GGATTTGGAGTTTCTTTCTGGTTTGCATTGTGGTTGGCCGCCGGCGTCTGCAGTTCAAG
5380 NOTI, 5381 EAGI XMA3, 5390 AAT2, 5401 SMAI XMAI,
5402 ProGlyGlyGlyGlnIleValGlyGlyValTyrLeuLeuProArgArgGlyProArgLeu
CCGGGTGGCGGTGAGATCGTTGGTGGAGTTTACTTGTGCGCGCAGGGGCCCTAGATTG
GGCCACCGCCAGTCTAGCAACCACCTCAATGAACAACGGCGCGTCCCCGGGATCTAAC
5449 APAI,
5462 GlyValArgAlaThrArgLysThrSerGluArgSerGlnProArgGlyArgArgGlnPro
GGTGTGCGCGGACGAGAAAGACTTCCGAGCGGTGCAACCTCGAGGTAGACGTCAGCCT
CCACACGCGCGCTGCTCTTTCTGAAGGCTCGCCAGCGTTGGAGCTCCATCTGCAGTCGGA
5467 BSSH2, 5478 XMNI, 5502 XHOI, 5511 AAT2,
5522 IleProLysAlaArgArgProGluGlyArgThrTrpAlaGlnProGlyTyrProTrpPro
ATCCCCAAGGCTCGTCGGCCCGAGGGCAGGACCTGGGCTCAGCCCCGGGTACCCTTGGCCC
TAGGGGTTCCGAGCAGCCGGGCTCCCGTCTGGACCCGAGTCGGGGCCCATGGGAACCGGG
5548 ALWN1, 5558 ESP1, 5564 SMAI XMAI, 5568 KPNI,
5582 LeuTyrGlyAsnGluGlyCysGlyTrpAlaGlyTrpLeuLeuSerProArgGlySerArg
CTCTATGGCAATGAGGGCTGCGGGTGGGCGGGATGGCTCCTGTCTCCCCGTGGCTCTCGG
GAGATACCGTTACTCCCGACGCCACCCGCCCTACCGAGGACAGAGGGGCACCGAGAGCC

FIG. 18I

4229 DRD1, 4236 ALWN1,
GluGluAlaIleTyrGlnCysCysAspLeuAspProGlnAlaArgValAlaIleLysSer
4262 GAGGAGGCAATCTACCAATGTTGTGACCTCGACCCCCAAGCCCGCTGGCCATCAAGTCC
CTCCTCCGTTAGATGGTTACAACACTGGAGCTGGGGGTTCTGGGCGCACCGGTAGTTCAGG
4301 BGLI, 4308 BALI,
LeuThrGluArgLeuTyrValGlyGlyProLeuThrAsnSerArgGlyGluAsnCysGly
4322 CTCACCGAGAGGCTTTATGTTGGGGGCCCTCTTACCAATTCAAGGGGGGAGAACTGCGGC
GAGTGGCTCTCCGAAATACAACCCCGGAGAATGGTTAAGTTCCTCCCTCTTGACGCCG
4345 APAI,
TyrArgArgCysArgAlaSerGlyValLeuThrThrSerCysGlyAsnThrLeuThrCys
4382 TATCGCAGGTGCCGCGCGAGCGGCGTACTGACAACTAGCTGTGGTAACACCCTCACTTGC
ATAGCGTCCACGGCGCGCTCGCCGCATGACTGTTGATCGACACCATTGTGGGAGTGAACG
TyrIleLysAlaArgAlaAlaCysArgAlaAlaGlyLeuGlnAspCysThrMetLeuVal
4442 TACATCAAGGCCCGGGCAGCCTGTGAGCCGCGAGGGCTCCAGGACTGCACCATGCTCGTG
ATGTAGTTCGGGGCCGTCGGACAGCTCGGCGTCCCGAGGTCTGACGTGGTACGAGCAC
4452 SMAI XMAI,
CysGlyAspAspLeuValValIleCysGluSerAlaGlyValGlnGluAspAlaAlaSer
4502 TGTGGCGACGACTTAGTCGTTATCTGTGAAAGCGCGGGGGTCCAGGAGGACGCGGCGAGC
ACACCGCTGCTGAATCAGCAATAGACACTTTCGCGCCCCCAGGTCTCTCTGCGCCGCTCG
4508 DRD1, 4511 TTH31,
LeuArgAlaPheThrGluAlaMetThrArgTyrSerAlaProProGlyAspProProGln
4562 CTGAGAGCCTTCACGGAGGCTATGACCAGGTACTCCGCCCCCCTGGGGACCCCCACAA
GACTCTCGGAAGTGCCTCCGATACTGGTCCATGAGGCGGGGGGACCCCTGGGGGGTGT
ProGluTyrAspLeuGluLeuIleThrSerCysSerSerAsnValSerValAlaHisAsp
4622 CCAGAATACGACTTGGAGCTCATAACATCATGCTCCTCCAACGTGTAGTCCCCACGAC
GGTCTTATGCTGAACCTCGAGTATTGTAGTACGAGGAGGTTGCACAGTCAGCGGGTGTCTG
4637 SACI,
GlyAlaGlyLysArgValTyrTyrLeuThrArgAspProThrThrProLeuAlaArgAla
4682 GCGCTGGAAAGAGGGTCTACTACCTCACCCGTGACCCTACAACCCCCCTCGCGAGAGCT
CCGCGACCTTTCTCCAGATGATGGAGTGGGCACTGGGATGTTGGGGGGAGCGCTCTCGA
4731 NRUI,
AlaTrpGluThrAlaArgHisThrProValAsnSerTrpLeuGlyAsnIleIleMetPhe
4742 GCGTGGGAGACAGCAAGACACACTCCAGTCAATTCCTGGCTAGGCAACATAATCATGTTT
CGCACCTCTGTGTTCTGTGTGAGGTGAGTTAAGGACCGATCCGTTGTATTAGTACAAA
AlaProThrLeuTrpAlaArgMetIleLeuMetThrHisPhePheSerValLeuIleAla
4802 GCCCCACACTGTGGGCGAGGATGATACTGATGACCCATTCTTTAGCGTCTTATAGCC
CGGGGTGTGACACCCGCTCCTACTATGACTACTGGGTAAGAAATCGCAGGAATATCGG
4806 PFLM1, 4807 DRA3,
ArgAspGlnLeuGluGlnAlaLeuAspCysGluIleTyrGlyAlaCysTyrSerIleGlu

FIG. 21H

4862 AGGGACCAGCTTGAACAGGCCCTCGATTGCGAGATCTACGGGGCCTGCTACTCCATAGAA
TCCCTGGTCGAACTTGTCCGGGAGCTAACGCTCTAGATGCCCCGGACGATGAGGTATCTT
4893 BGL2,
ProLeuAspLeuProProIleIleGlnArgLeuHisGlyLeuSerAlaPheSerLeuHis
4922 CCACTGGATCTACCTCCAATCATTCAAAGACTCCATGGCCTCAGCGCATTTTCACTCCAC
GGTGACCTAGATGGAGGTTAGTAAGTTTCTGAGGTACCGGAGTCGCGTAAAAGTGAGGTG
4954 NCOI,
SerTyrSerProGlyGluIleAsnArgValAlaAlaCysLeuArgLysLeuGlyValPro
4982 AGTTACTCTCCAGGTGAAATCAATAGGGTGGCCGCATGCCTCAGAAAAGTTGGGGTACCG
TCAATGAGAGGTCCACTTTAGTTATCCACCGGCGTACGGAGTCTTTTGAACCCCATGGC
5015 SPHI, 5035 KPNI,
ProLeuArgAlaTrpArgHisArgAlaArgSerValArgAlaArgLeuLeuAlaArgGly
5042 CCCTTGGGAGCTTGGAGACACCGGGCCCGGAGCGTCCGCGCTAGGCTTCTGGCCAGAGGA
GGGAACGCTCGAACCTCTGTGGCCCGGGCCTCGCAGGCGCGATCCGAAGACCGGTCTCTCT
5064 APAI, 5091 BALI,
GlyArgAlaAlaIleCysGlyLysTyrLeuPheAsnTrpAlaValArgThrLysLeuLys
5102 GGCAGGGCTGCCATATGTGGCAAGTACCTCTTCAACTGGGCAGTAAGAACAAGCTCAAA
CCGTCCCAGCGGTATACACCGTTCATGGAGAAGTTGACCGTCATTCTTGTTCGAGTTT
5113 NDEI,
LeuThrProIleAlaAlaAlaGlyGlnLeuAspLeuSerGlyTrpPheThrAlaGlyTyr
5162 CCACTCCAATAGCGGCCGCTGGCCAGCTGGACTTGTCCGGCTGGTTCACGGCTGGCTAC
GAGTGAGGTTATCGCCGGCGACCGGTTCGACCTGAACAGGCCGACCAAGTGCCGACCGATG
5174 NOTI, 5175 EAGI XMA3, 5182 BALI, 5186 PVU2,
SerGlyGlyAspIleTyrHisSerValSerHisAlaArgProArgTrpIleTrpPheCys
5222 AGCGGGGAGACATTTATCACAGCGTGTCTCATGCCGGGCCCGCTGGATCTGGTTTTGC
TCGCCCCCTCTGTAAATAGTGTGCGACAGAGTACGGGGCGGGGCGACCTAGACCAAAACG
5240 DRA3,
LeuLeuLeuLeuAlaAlaGlyValGlyIleTyrLeuLeuProAsnArgMetSerThrAsn
5282 CTACTCCTGCTTGCTGCAGGGGTAGGCATCTACCTCCTCCCCAACCGAATGAGCACGAAT
GATGAGGACGAACGACGTCCCCATCCGTAGATGGAGGAGGGGTTGGCTTACTCGTGCTTA
5295 PSTI,
ProLysProGlnArgLysThrLysArgAsnThrAsnArgArgProGlnAspValLysPhe
5342 CCTAAACCTCAAAGAAAGACCAAACGTAACACCAACCGGCGGCCGAGGACGTCAAGTTC
GGATTTGGAGTTTCTTTCTGGTTTGCATTGTGGTTGGCCGCCGCGTCTGCAGTTCAAG
5380 NOTI, 5381 EAGI XMA3, 5390 AAT2, 5401 SMAI XMAI,
ProGlyGlyGlyGlnIleValGlyGlyValTyrLeuLeuProArgArgGlyProArgLeu
5402 CCGGGTGGCGGTGAGATCGTTGGTGGAGTTTACTTGTGCGCGCAGGGGCCCTAGATTG
GGCCACCGCCAGTCTAGCAACCACTCAAATGAACAACGGCGGTCCCCGGGATCTAAC

FIG. 21I

2342 LysGlyValTrpArgGlyAspGlyIleMetHisThrArgCysHisCysGlyAlaGluIle
AAGGGGGTCTGGCGAGGGGACGGCATCATGCACACTCGCTGCCACTGTGGAGCTGAGATC
TTCCCCAGACCGCTCCCCTGCCGTAGTACGTGTGAGCGACGGTGACACCTCGACTCTAG

2402 ThrGlyHisValLysAsnGlyThrMetArgIleValGlyProArgThrCysArgAsnMet
ACTGGACATGTCAAAAACGGGACGATGAGGATCGTCGGTCCTAGGACCTGCAGGAACATG
TGACCTGTACAGTTTTTGCCTGCTACTCCTAGCAGCCAGGATCCTGGACGCTCCTTGAC
2425 BSAB1, 2441 AVR2, 2448 SSE83871, 2449 PSTI,

2462 TrpSerGlyThrPheProIleAsnAlaTyrThrThrGlyProCysThrProLeuProAla
TGGAGTGGGACCTTCCCCATTATGCCTACACCACGGGCCCCCTGTACCCCCCTTCCTGCC
ACCTCACCTGGAAGGGGTAAATTACGGATGTGGTGCCCGGGGACATGGGGGGAAGGACGC
2480 ASE1, 2497 APAI,

2522 ProAsnTyrThrPheAlaLeuTrpArgValSerAlaGluGluTyrValGluIleArgGln
CCGAACACACGTTCCGCTATGGAGGGTGTCTGCAGAGGAATACGTGGAGATAAGGCAG
GGCTTGATGTGCAAGCGCGATACCTCCACAGACGTCTCCTTATGCACCTCTATTCCGTC
2553 PSTI,

2582 ValGlyAspPheHisTyrValThrGlyMetThrThrAspAsnLeuLysCysProCysGln
GTGGGGGACTTCCACTACGTGACGGGTATGACTACTGACAATCTTAAATGCCCGTGCCAG
CACCCCTGAAGGTGATGCACTGCCCATACTGATGACTGTTAGAATTTACGGGCACGGTC
2594 DRA3,

2642 ValProSerProGluPhePheThrGluLeuAspGlyValArgLeuHisArgPheAlaPro
GTCCCATCGCCCGAATTTTTCACAGAATTGGACGGGGTGCGCCTACATAGGTTTGCGCCC
CAGGGTAGCGGGCTTAAAAAGTGTCTTAACCTGCCCCACGCGGATGTATCCAAACGCGGG

2702 ProCysLysProLeuLeuArgGluGluValSerPheArgValGlyLeuHisGluTyrPro
CCCTGCAAGCCCTTGCTGCGGGAGGAGGTATCATTAGAGTAGGACTCCACGAATACCCG
GGGACGTTCCGGGAACGACGCCCTCCTCCATAGTAAGTCTCATCCTGAGGTGCTTATGGGC
2757 HGIE2,

2762 ValGlySerGlnLeuProCysGluProGluProAspValAlaValLeuThrSerMetLeu
GTAGGGTCGCAATTACCTTGCGAGCCCGAACCAGGACGTGGCCGTGTTGACGTCCATGCTC
CATCCAGCGTTAATGGAACGCTCGGGCTTGGCCTGCACCGGCACAACCTGCAGGTACGAG
2809 AAT2,

2822 ThrAspProSerHisIleThrAlaGluAlaAlaGlyArgArgLeuAlaArgGlySerPro
ACTGATCCCTCCCATATAACAGCAGAGGCGGCGGCGAAGGTTGGCGAGGGGATCACCC
TGACTAGGGAGGGTATATTGTCGTCTCCGCGGCGCCGCTTCCAACCGCTCCCCTAGTGGG
2850 EAG1 XMA3,

2882 ProSerValAlaSerSerSerAlaSerGlnLeuSerAlaProSerLeuLysAlaThrCys
CCCTCTGTGGCCAGCTCCTCGGCTAGCCAGCTATCCGCTCCATCTCTCAAGGCAACTTGC
GGGAGACACCGGTCGAGGAGCCGATCGGTCGATAGGCGAGGTAGAGAGTTCCGTTGAACG
2889 BALI, 2903 NHEI,

FIG. 22E